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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,810	08/25/2003	Naoki Imachi	SNY-039	1318
20374	7590	05/03/2006	EXAMINER	
KUBOVCIK & KUBOVCIK SUITE 710 900 17TH STREET NW WASHINGTON, DC 20006			CHU, HELEN OK	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,810	<b>Applicant(s)</b> IMACHI ET AL.	
	<b>Examiner</b> Helen O. Chu	<b>Art Unit</b> 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/25/03, 8/8/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 9-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cho (JP 11-126633).

In reference to claim 1-4 and 9-16, the Cho reference teaches a lithium ion battery with the ability to receive and release Li ions reversibly (Applicant's secondary battery; Abstract) and a non-aqueous electrolyte solution that comprises ethylene carbonate and gamma-butyrolactone (Claim 3) as the solvent and a hypoviscosity solvent of dimethoxyethane (Claim 4). It is inherent that the intrinsic properties of the wettability agent dimethoxyethane has a decomposition potential of 4.8 - 5.2 V and a reductive decomposition potential of 0.0 V in contrast to a reference electrode because this compound is the same as the Applicant's claimed invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 5-8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamoto et al (US Publication 2002/0039677 A1).

In regards to claim 1-4, 5-8 and 17, the Iwamoto et al reference teaches a non-aqueous electrolyte secondary battery (Paragraph 3) with a polyethylene separator (Paragraph 104), an electrolytic solution made of ethylene carbonate and a gamma-butyrolactone solvent (Paragraph 7) and teaches a tetrahydrofuran carbonate as an additive (Applicants' wettability agent; Paragraph 42) at a preferable 0.5-5 weight by parts (Paragraph 44). The Iwamoto et al reference also teaches if the amount of additives is less than 0.1 part by weight, the effect to inhibit evolution of gases is not improved so much, and if it exceeds 10 parts by weight, the film formed on the electrodes is too thick and discharge characteristics deteriorates. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to choose the instantly claimed value through process optimization, since it has been held that the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable values involve only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980). Though the Applicants' claimed invention requires a tetrahydrofuran as an additive, under the conditions given in the battery and in combination with the electrolytic solution, the Iwamoto et al reference teaches an equivalent ester tetrahydrofuran derivative. These compounds share close structural similarities between chemical compounds of homolog, analogues, and isomers. Therefore, it would have been obvious to one having ordinary skill in the

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art at the time the invention was made to use the first compound because one skilled in the art would expect similar chemical structure to exhibit similar properties. See *In re Payne*, 606 f.2d 303, 203 USPQ 43 (CCPA 1963) and see *In re Dillion*, 919 F.2D 688, 16 USPQ2d 1897 (Fed. Cir. 1991).

Furthermore, it would be inherent that the reductive decomposition potential of the wettability improving agent is no greater than 0.0V because this is only a reference state.

### ***Conclusion***

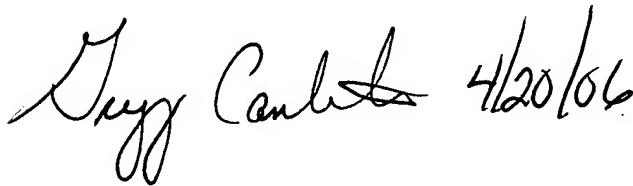
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOC

A handwritten signature in cursive script, followed by the date "4/20/06".

**GREGG CANTELMO**  
**PRIMARY EXAMINER**